

**SPECIFICATION
FOR
BLEACHERS, TELESCOPING, INDOOR**

(This specification is released for procurement purposes until revised or rescinded.)

SCOPE

This specification covers the requirements for the construction, safety, and installation of indoor bleachers (seats without backs) of the attached, store-in-place type generally consisting of a self supporting steel under frame designed to telescope or fold and to which is attached seatboards, footboards, and risers. All bleachers offered under this specification shall be of the closed deck construction.

I. CLASSIFICATION

Class I – ADA Accessible

Seat boards and Riser boards (To be specified)

Type 1 - Solid wood construction.

Type 2 - Vinyl on steel construction.

Type 3 - High strength polyethylene construction.

Attachment Method (To be specified)

- A. Wall Attachment
- B. Free Standing
- C. Portable

Propulsion (To be specified)

- A. Manual Operation
- B. Power Operation (Choose one)
 - 1. Friction Power
 - 2. Non-Friction Power
- C. Power Assist Operation with Portable Tractor

Direction (To be specified)

- A. Forward Fold
- B. Reverse Fold

Size (To be specified)

- A. Bank Length
- B. Number of Rows
- C. Row Spacing
 - 1. Regular Spacing 22" – 26"
 - 2. Wide Spacing 27" – 33"

- Row Rise
3. Low 9" – 11"
4. Medium 12" – 15"
5. High 16" or above

Seats (Specify)

- A. 10" or 12" Depth
B. Color (One color)
C. Seat Number and Row Letters, If Required

Class II – Non-ADA Accessible

(Note: Items to be specified by the purchaser for this classification are the same as for **Class I**)

II. APPLICABLE STANDARDS

The following documents of issue in effect on the date of the Invitation for Bids shall form a part of this specification to the extent specified:

THE NORTH CAROLINA STATE BUILDING CODE

Grandstands, Reviewing Stands and Bleachers (Chapters 9, 10, and 16)

N. C. Insurance Department
Engineering and Building Codes Division
P. O. Box 26387
Raleigh, NC 27611

THE NORTH CAROLINA STATE ACCESSABILITY CODE

(Chapters 5, 6, and 22)
N. C. Insurance Department
Engineering and Building Codes Division
P. O. Box 26387
Raleigh, NC 27611

Assembly Seating, Tents, and Membrane Structures (NFPA Standard 102)

National Fire Protection Association (NFPA)
60 Batterymarch Street
Boston, MA 02110

ASTM Standards A-194, A-325, A-490, A-563, A-242, A-606, A-588

American Society For Testing & Materials (ASTM)
1916 Race Street
Philadelphia, PA 19103

III. REQUIREMENTS

A. DESIGNER QUALIFICATIONS

The designer shall be a registered architect or engineer. Each sheet of drawings called for in the Invitation for Bids shall bear the appropriate seal of the design Architect/Engineer as required by Chapter 133, Section 133-1 of the NC General Statutes.

Where the cost of the bleacher is less than \$135,000, the seal of registration of the Architect/Engineer may be that of the Architect/Engineer's state practice.

Where the cost of the bleacher is \$135,000, or more, the seal of registration of the Architect/Engineer shall be that of the State of North Carolina.

B. BIDDER QUALIFICATIONS

Any person, firm, or corporation offering a bid to furnish and erect a bleacher under this specification, which will cost \$30,000, or more, shall have, in accordance with Chapter 87, Section 87-1 of the NC General Statutes, a GENERAL CONTRACTOR'S LICENSE in effect on the date for opening the bids and shall maintain this license in good standing until the project is completed.

C. LICENSES, PERMITS, APPROVALS, ETC.

The successful contractor shall obtain, at his expense, any license, permit, approval, etc. required or necessary to offer a bid and perform the work as required under the contract.

D. DESIGN

The bleacher shall be designed, manufactured and assembled to meet all of the applicable requirements of the North Carolina State Building Code and National Fire Protection Association Standard No. 102 in effect on the date for opening of the bid.

E. ACCESSIBILITY

Accessibility for handicapped persons for **Class I** bleachers shall be in accordance with the requirements of the NC STATE ACCESSABILITY CODE in effect on the date of the bid opening.

F. CONSTRUCTION

1. Under frame

Under frame shall be of ASTM #A-36 specification steel (or better) structural shapes electrically welded together by certified welders into the largest sections convenient for field handling and minimal bolted field connections. Each connection to be made with ASTM #A-307 specification steel bolts, nuts, and lock-washers, or locknuts. Each standard width under frame shall contain such columns, braces, members, etc., in the size, shape, and location required for it to be self-supporting and resist the CODE loads when unattached, opened, and without seat boards, risers, or footboards. Steel risers will be considered as structural members when fastened in an acceptable manner.

2. Seat boards and Riser boards

Type 1 - Wood seat boards and riser boards shall be approximately 1" thick of Douglas fir or Southern yellow pine or similar species kiln dried and cut to size and carefully sanded with all edges and corners rounded and smooth. Seat boards and riser boards shall be one piece except that finger jointed splices or edge gluing may be used in the length of the board.

Style 1. Grade B or better solid lumber, finger jointing (max. 4 joints in 20') allowed. Edge-gluing, butcher block, laminating, plugs, staples, mixed species prohibited.

Style 2. Grade C or better solid lumber, edge gluing allowed. Butcher block, laminating, plugs, staples, mixed species prohibited.

Type 2. - Steel (Combination seat & riser vinyl covered steel) to be formed of heavy gauge sheet metal formed as to provide a combination seat and riser. Vinyl coating shall constitute a permanent finish.

Type 3. - Plastic (Combination seat & riser) seat and riser to be made of high-density polyethylene and provide comfortable, durable seating.

3. Decking (To be one of the following:)

a) Wood

Decking to be a minimum of 5/8" (nominal) AC grade plywood, interior type with exterior glue, 5-ply, all plies Southern Pine or Douglas Fir with plugged crossbands. Mixed lumber species is unacceptable.

b) Carpet over wood base

Wood base to meet above specs for wood decking

c) Poly Deck

Decking to be a high-density polyethylene overlay panel fabricated with a skid-resistant textured top surface of 100% moisture barrier bonded to a nominal 5/8" plywood (same spec as wood deck) with exterior glue.

d) Aluminum (Style, grade, and finish to be specified in the Invitation For Bids)

3. Wall attachment

When specified shall be by use of a minimum 2" x 6" continuous wall buck unless otherwise specified. Wall attachment shall be approved by the owner and shown in detail on shop drawings. A rear gap filler (deck or seat level) to close the space between the wall and the rear seats shall be provided.

5. Skirt board

At the floor level an additional skirt board shall be hinged mounted so as to close the gap between the floor and the first level seat riser. This hinged front skirt board shall be mounted with keyed security to prevent unauthorized use of bleachers. On electrically operated bleachers, this skirt board can be designed to serve as a required motor access.

6. Aisles, Handrails, And Guardrails

Unless otherwise specified, manufacturer's standard aisle, handrail, and guardrail shall be furnished. However, all must comply with the latest N.C. Building Code requirements.

G. FINISHES

All surfaces subject to wear by spectators shall have a finish that does not wear to show a different color underneath.

1. All metal finishes requiring rust-resistant finish (understructure, end rails, hand rails, nose and rear risers, etc.) shall be powder coated.
2. Decking - All surfaces of plywood decking to receive one moisture repellent sealer coat. In addition, 2 coats minimum of clear high solids polyurethane or paint shall be required as specified.
3. Type 1 (wood seat boards and risers) seat boards and risers are to have a clear/natural finish consisting of a moisture repellent sealer coat with use surfaces to receive two (2) coats of clear high-solids polyurethane. For aluminum decking, either mill finish, clear anodized, or anodized (color). (Purchaser to specify aluminum finish)

4. Type 2 (Steel) manufacturer's standard vinyl selections to be provided unless otherwise specified.
5. Type 3 (Plastic) manufacturer's standard plastic selections to be provided unless otherwise specified.

H. PROPULSION

Type 1 Manual Operation

Bleachers to open and close by manually pulling and pushing each section of bleachers into position. All sections shall have Operator Handle Attachments.

Type 2 Portable Power Assist Unit

Bleachers to open and close by manually pulling and pushing each section into position with the aid of a Portable Power Assist Unit.

Type 3 Integral Electric Power

The following features are required on Integral Electric Power Operation regardless of Style Selected:

- a. U.L Approval
All Integral Electric Power Systems shall be approved and listed by Underwriters Laboratories. Bidder shall provide U.L. Listing Certification Number on all Submittal Drawings.
- b. Limit Switches
Furnish and install both open and closed limit switches for the integral power system. The limit switches will automatically stop integral power operation when seating has reached the fully extended or closed position.
- c. Pendent Control
Operation shall be with a removable pendant control unit which plugs into seating bank for operator management of stop, start, forward, and reverse control of the power operation. To be designed to allow changing of forward and reverse mode without changing connection locations.
- d. Operation
Provide not less than one motor per bleacher section. Motor systems shall utilize a combination of contactors and limit switches to ensure the wiring is not energized except during operation. Straight-wired electric system is not allowed. All motor weights, if utilized, shall be secured.
- e. Motion Monitor:
Provide a strobe light and a warning horn rated at 150 db, both of which are to operate during the time any section of bleachers is in motion. The strobe light shall be mounted so that it is clearly visible to the entire bleacher installation.
- f. Output Wheels
Each motor unit shall consist of output shaft gear reducer with wheels covered with non-marring composite rubber.
- g. Motor Access:
Each motor shall be accessible through a hatchway or hinged motor access (min. 30" wide) as standard per manufacturer. A hinged front skirt is permissible as a motor access.
- h. Motor Size:
Motors shall be sized adequately to perform the assigned function.

I. ACCESSORIES

The following shall be furnished when specified in the Invitation for Bids:

1. End panels on open ended banks, type and material to be specified.
2. Access hatchway on closed end banks and number to be specified.
3. Rear panels- Type and material to be specified.
4. Self-storing safety vinyl end curtains. Size, configuration, and color to be specified.
5. Scorer's table, with deck sockets, that fold and store within bank; size to be specified.
6. Rear gap fillers to close space between wall and rear seats.
7. Self-storing end rails that start at 2nd row.
8. Column and/or roof drain cutouts as required.
9. Electric power propulsion - Each section to have individual tractors. Seating manufacturer to provide all wiring within seating bank. Owner to provide 120/208 SP 40 AMP service for each bank of seating. The owner will be responsible for all final connections between seating and power source. Seating electrical system must utilize limit switches at the fully open and closed positions when specified. Lockable hinged entrance to each motor not less than 30" wide to be provided through the front riser. All motor weights secured.

J. INSTALLATION

Assembly/erection and installation shall be complete and with all work performed by factory certified or authorized installer. Installers shall be trained and experienced mechanics thoroughly familiar with the installation of the type and make of bleacher being furnished. Proof of installation certification or factory approval to be provided to owner.

K. DRAWINGS

A. Plan/Site Drawings

A plan/site drawing showing bleacher units along with all required aisles, steps, guardrails, ADA facilities, etc. in relation to the bleacher and its egress points is required with the bidder's proposal. This drawing should be detailed enough to allow the evaluation and award of the contract. This drawing is not to be construed as an erection/installation drawing. This site plan need not bear the seal of the design Architect or Engineer.

B. Erection/Shop Drawings

The successful contractor shall submit a specified number of copies of customized erection/shop drawings to the agency purchasing entity and the end user prior to fabricating and shipping the bleacher. These drawings shall include detailed information as to required aisles, steps, guardrails, ADA facilities, site elevations, etc. in relation to the bleacher and its egress points, attachments to the building and/or other work required. This drawing shall provide all of the necessary information required to erect the bleacher in accordance with the manufacturer's design requirements. This drawing shall bear the seal of the design Architect or Engineer.

IV. WARRANTY

The contractor warrants to the owner that all bleacher units furnished and installed under this specification will be new, of good material and workmanship, including the installation, and agrees to replace promptly any part or parts which by reason of defective material or workmanship shall fail under normal use, free of negligence or accident, for a minimum period of five years from the date of written acceptance. Such replacement shall be free of any charge to the owner or his representative.

V. TRAINING AND MANUALS

The contractor shall furnish the owner with at least three copies of operating and maintenance manuals normally supplied by the bleacher manufacturer. Successful contractor is required to provide one on-site training session designed to demonstrate the proper and safe operation of proposed equipment. This training session shall occur at a mutually agreeable site designated by the Agency with hands-on participation by agency operators. One on-site training session is to be provided at no additional cost to the State.

VI. ACCEPTANCE INSPECTION AND TESTING

Prior to acceptance and payment, the bleacher installation furnished under this specification shall be inspected by the purchaser or his authorized representative for compliance with this specification and the Invitation for Bids.

VII. DELIVERY AND PAYMENT

Delivery and payment for bleachers furnished under this specification shall be in accordance with the terms and conditions of the Invitation for Bids. The contractor shall be responsible for any packing, packaging, or protection required to insure delivery in an undamaged condition.

VIII. ORDERING DATA

Purchasers should exercise any desired option offered herein and Should specify in the Requisition and Invitation For Bids:

1. Title, number, and date of this specification.
2. The type of bleacher desired. (See CLASSIFICATION).
3. The size (length and depth), and the number of rows. The seat spacing desired, the approximate row rise desired, the seating and decking material desired (wood, vinyl-on-steel, polyethylene, etc.), and a description of the site location - a simple floor plan drawing should be attached showing this information if available. In addition, obtain certification that area of installation has sufficient strength to support bleachers and sufficient exits to meet building code.
4. Indicate if accessibility by the handicapped is required or what other provisions have been made for handicapped spectators.
5. If aisles are required or desired, indicate locations, type and width and if center rail is required.
6. Number of copies and type of drawings required.
7. If approval of drawings is required prior to installation.
8. Propulsion system
9. Type and grade (if lumber) of seaboards and riser boards.
10. If wall attachment is required. Also specify if continuous wall buck is not required.
11. Decking finish to be specified.
12. If special vinyl colors are required on metal seats and risers.
13. If special colors are required on plastic seats and risers.
14. If accessories are required.

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